

- (8A) MAF FOR L RUDDER "X" DTD 18APR94
- (9A) CATAPULT 1 SHOT LOG
- (10A) CATAPULT 1 CHRONOGRAPH LOG
- (11A) VFA-83 FLIGHT SCHEDULE DTD 28 APR 1994
- (12A) MC1 ELECTRONIC DATA RETRIEVAL SUMMARY DTD 29 NOV 94
- (13A) NAWC CHINA LAKE MEMO DTD 16 DEC 94
- (14A) MDA AERONAUTICAL/FLIGHT CONTROL ANALYSIS DTD 14 DEC 94
- (15A) EI ON ALSS EQUIP (NAWC CHINA LAKE CA 151738Z JUN 94)
- (16A) EI ON L ENGINE (NADEP JACKSONVILLE FL 260633Z OCT 94)
- (17A) EI ON R ENGINE (NADEP JACKSONVILLE FL 010633Z NOV 94)
- (18A) EI ON MC1 (NADEP NORFOLK VA 050524Z DEC 94)
- (19A) NAVAIR FAX DTD 24DEC94: FLEET TOP SAFETY CONCERN
- (20A) NATOPS FLIGHT MANUAL PAGES III-8-2 THRU III-8-5
- (21A) HYDRAULIC RUDDER SERVOCYLINDER ILLUSTRATION
- (22A) COPY OF PILOT'S LOGBOOK
- (23A) ORIGINAL EI ON HYDRAULIC COMPONENTS (NADEP NI 101501Z AUG 94)
- (24A) L RUDDER SERVOCYLINDER EI ADDENDUM (NADEP NI 061556Z JAN 95)
- (25A) VFA-81 HAZREP 01-94 DTD 22JAN94
- (26A) MDA SOFTWARE ANOMALY REPORT 12231 DTD 5 MAY 94
- (27A) EI ON L RUDDER SERVOCYLINDER FROM 22JAN94 VFA-81 INCIDENT (NADEP NI 091558Z NOV 94)
- (28A) MOTOR WHALEBOAT SAR STATEMENT
- (29A) HS-15 SAR REPORT

PRIVILEGED ENCLOSURES:

- (1B) VFA-83 122130Z JAN 95 (MIR MESSAGE)
- (2B) STATEMENT OF VFA-83 ASSISTANT MAINTENANCE OFFICER
- (3B) SIMULATOR RESULTS SUMMARY
- (4B) ENHANCED HANDHELD VIDEO AND MISHAP SIMULATION VIDEO
- (5B) STATEMENT OF VFA-83 MAINTENANCE CONTROL COORDINATOR (DAY)
- (6B) STATEMENT OF VFA-83 MAINTENANCE CONTROL COORDINATOR (NIGHT)
- (7B) STATEMENT OF VFA-83 MAINTENANCE MASTER CHIEF
- (8B) STATEMENT OF V-2 DIVISION OFFICER
- (9B) STATEMENT OF CATAPULT OFFICER
- (10B) STATEMENT OF V-2 MAINTENANCE CONTROL OFFICER
- (11B) STATEMENT OF VFA-83 FLIGHT DECK COORDINATOR
- (12B) STATEMENT OF VFA-83 QUALITY ASSURANCE REPRESENTATIVE

**CAUTION**

The maximum wind allowed for canopy opening is 60 knots. Attempting canopy opening in headwinds of more than 60 knots or in gusty or variable wind conditions may result in damage to or loss of the canopy.

**8.2.2 Engine Start.** When directed, start engines. APU starts should be made whenever possible. Crossbleed starts must be approved by the Air Boss due to the relatively high power setting required, and the potential for injury from the jet blast.

Perform the before taxi checks and be ready to taxi when directed.

**8.2.3 Taxi****WARNING**

- Ensure anti-skid switch is OFF for all carrier operations.
- Wait 5 seconds after wings are fully spread before placing the WING FOLD handle to LOCK. Placing the WING FOLD handle to LOCK before the wings are fully spread will remove the WING UNLK caution even though the wings are not fully spread and will also cause severe damage to the wing fold transmission.

Taxiing aboard ship is much the same as ashore, but increased awareness of jet exhaust, and aircraft directors are mandatory.

Nosewheel steering is excellent for directional control aboard ship. Taxi speed should be kept under control at all times, especially on wet decks, in the landing area, and approaching the catapult. The canopy should be down, oxygen mask on, and the ejection seat armed during taxi. Be prepared to use the emergency brake should normal braking fail. In the event of loss of

brakes, inform the tower and lower the tailhook immediately to indicate brake loss to the deck personnel.

**8.2.4 Hangar Deck Operation.** Occasionally the aircraft will be manned on the hangar deck. Follow the same procedures as those concerning flight deck operation.

Tiedowns shall not be removed from the aircraft unless emergency brake accumulator pressure gage indicates at least 2,600 psi. The emergency brake shall be used for stopping the aircraft anytime it is being moved while the engines are not running. If the aircraft is not already on the elevator, it will be towed or pushed (with the pilot in the cockpit) into position to be raised to the flight deck. Close the canopy, ensure tiedowns are in place, and put the parking brake on anytime the aircraft is on the elevator.

The signal to stop an aircraft that is being towed is either a hand signal or a whistle blast. The whistle signifies an immediate or emergency stop. Leave the canopy open and helmet off to ensure hearing the whistle; keep the plane director in sight at all times. If unable to see the plane director, or if in doubt of safe aircraft movement, stop the aircraft immediately.

**8.2.5 Before Catapult Hook-Up.** Before taxi onto the catapult, complete the takeoff checklist, set the standby attitude reference indicator for use if the HUD fails during the launch. With flaps HALF or FULL, the takeoff trim button should be pressed until you see the TRIM advisory and then the horizontal stabilator trim should be manually positioned for CG location, excess end airspeed and power setting for launch. The takeoff trim button need not be pressed between successive launches in a single flight. With an asymmetric load, trim stabilator for normal position then trim differential stabilator unloaded wing down. The trim settings in figure 8-1 are applicable for HALF flaps only, all air-to-air stores, air-to-ground stores, clean aircraft, external fuel tanks, gross weights and launch center-of-gravity between 17.0 and 27.5% MAC. Exemption 3, 10 U.S.C. § 130

Correct stabilator trim is critical to aircraft hands off fly-away performance. Stabilator trim affects initial pitch rate and determines AOA capture. A low trim setting will both lower the initial pitch rate below optimum and cause the aircraft to fly away in a flatter attitude due to a lower than optimum AOA capture. This will result in degraded climb performance after launch.

### WARNING

Use of catapult 4 is restricted with a Walleye I ER/DL, Walleye II ER/DL (when cleared for carriage), AGM-88 HARM or AGM-123 Skipper (when cleared for carriage) loaded on station 2, due to lack of clearance between these weapons and deck edge coaming (CV-59 and subsequent) and the integrated catapult control system (CVN-68 and subsequent) in the event of a blown left mainmount and compressed left main gear strut.

The following trim settings are recommended:

#### **Symmetrical loading -**

- a. Directional trim - 0°
- b. Lateral trim - 0°
- c. Longitudinal trim - See figure 8-1

#### **Asymmetrical loading -**

- a. Directional trim - 0°
- b. Longitudinal trim (first) - See figure 8-1
- c. Lateral trim - See figure 8-1

**8.2.6 Catapult Hook-Up.** Before taxiing past the shuttle, aircraft gross weight should be verified, takeoff checklist complete, and arming completed by the ordnance crew if required. Check external fuel quantity. Approach the catapult track slowly, lightly riding the brakes, with nosewheel steering on. Use minimum power

required to keep the aircraft rolling. Close attention to the plane director's signals is required to align the aircraft with the catapult track entry wye. When aligned, the plane director will signal the pilot to lower the launch bar. Place the launch bar switch to EXTEND. The green LAUNCH BAR advisory light will come on and nosewheel steering will disengage. Nosewheel steering low mode may be engaged while the launch bar is down by pressing and holding the nosewheel steering button. This should only be done on signal from the director since catapult personnel may be in close proximity to the launch bar. Do not use nosewheel steering once the launch bar enters the track. The catapult crew will install the holdback bar. Taxi forward slowly, following the signals of the plane director. When the launch bar drops over the shuttle spreader, the aircraft will be stopped by the holdback bar engaging the catapult buffer. On aircraft 161353 THRU 161715, upon receipt of the "Release Brakes" signal, advance throttles to 85% to 90% rpm. Do not advance throttles to MIL at this time since this could retract the launch bar before it is trapped by the tensioned shuttle spreader. On aircraft 161716 AND UP, upon receipt of the "Release Brakes" signal, advance throttles to MIL.

#### **8.2.7 Catapult Launch**

### WARNING

Do not catapult with partially full external fuel tank(s).

When the "Final Turnup" signal is received from the catapult officer, advance throttles to MIL or MAX. On aircraft 161353 THRU 161715, the launch bar switch will automatically return to RETRACT and the green LAUNCH BAR advisory light will go out. On aircraft 161716 AND UP, place the launch bar switch to RETRACT. Cycle the flight controls, wait 4 seconds then ensure all warning and caution lights are out. If afterburners are to be used, select them on signal from the catapult officer. Check engine instruments. When satisfied that the aircraft is ready for launch, hold throttles

Exemption 3, 10 U.S.C. § 130

firmy against the detent, place your head against the head-rest, then salute the catapult officer with your right hand.

**NOTE**

Failure to place launch bar switch to retract may result in hydraulic seal failure.

Throttle friction may be used to help prevent inadvertent retraction of the throttles during the catapult stroke. If required, it can be overridden if afterburner is needed due to aircraft/catapult malfunction. Immediately after the end of the catapult stroke the aircraft will rotate to capture the trimmed AOA without control stick inputs. PIO can occur immediately after launch if the control stick is restrained during the launch or control inputs are made immediately after launch. The pilot should closely monitor the catapult sequence and be prepared to make corrections if required. Clearing turns should not be made until sufficient flying speed is attained. Retract the gear and flaps when a positive rate of climb is established.

The longitudinal flight control system is designed to rotate the aircraft to a reference or capture AOA following catapult launch.

Exemption 3, 10 U.S.C. § 130

The longitudinal trim setting obtained from Launch Trim (figure 8-1) is designed to provide the aircraft with a consistent \*

\* pitch rate as a function of CG and catapult excess. Setting a trim higher than recommended will increase the pitch rate and reference AOA

\* Normal catapult launches \*

\* are characterized by initial rotation to as high as \* AOA before AOA and pitch rate feedbacks reduce AOA to the reference value. With normal end speed and deck conditions 4 to 6 feet of settle can be expected. At higher reference AOAs associated with forward CG or low excess end speed launches, the forward field of view is restricted and the pilot will lose the HUD

horizon bar and velocity vector as visual climb cues. With a steady deck and zero knot excess end speed, 20 feet of settle can be expected. At high gross weights, the aircraft does not settle significantly more at normal catapult excess end speeds, Exemption 3, 10 U.S.C. § 130

Building a good catapult instrument scan of airspeed, radar altitude, and AOA, and knowing the trim commanded reference AOA is necessary to prepare for all catapult launches. Additionally, a good scan will aid in assessing degraded fly-away performance caused by catapult or aircraft malfunction or stabilator mistrim.

**WARNING**

The close proximity of the Flap and Launch Bar switches may result in inadvertent selection of FLAPS UP vice launch bar up.

**8.2.8 Catapult Suspend.** If you want to stop the launch while tensioned on the catapult, signal by shaking the head negatively and transmitting "SUSPEND, SUSPEND" on land/launch frequency. Do not use a thumbs down signal or any hand signal that might be mistaken for a salute. The catapult officer will reply with a "SUSPEND" signal followed by an "UNTENSION AIRPLANE ON CATAPULT" signal. The shuttle spreader will be moved aft and the launch bar will automatically raise clear of the shuttle spreader. Maintain power at MIL/MAX until the catapult officer steps in front of the aircraft and signals "THROTTLE BACK". The same signals will be used when a catapult malfunction exists.

**8.2.9 Landing Pattern.** Refer to Chapter 4, for carrier operating limitations.

While maneuvering to enter the traffic pattern, attempt to determine the sea state. This information will be of value in predicting problems that may be encountered during the approach and landing.

Enter the carrier landing pattern (figure 8-2) with the hook down. Make a level break from a

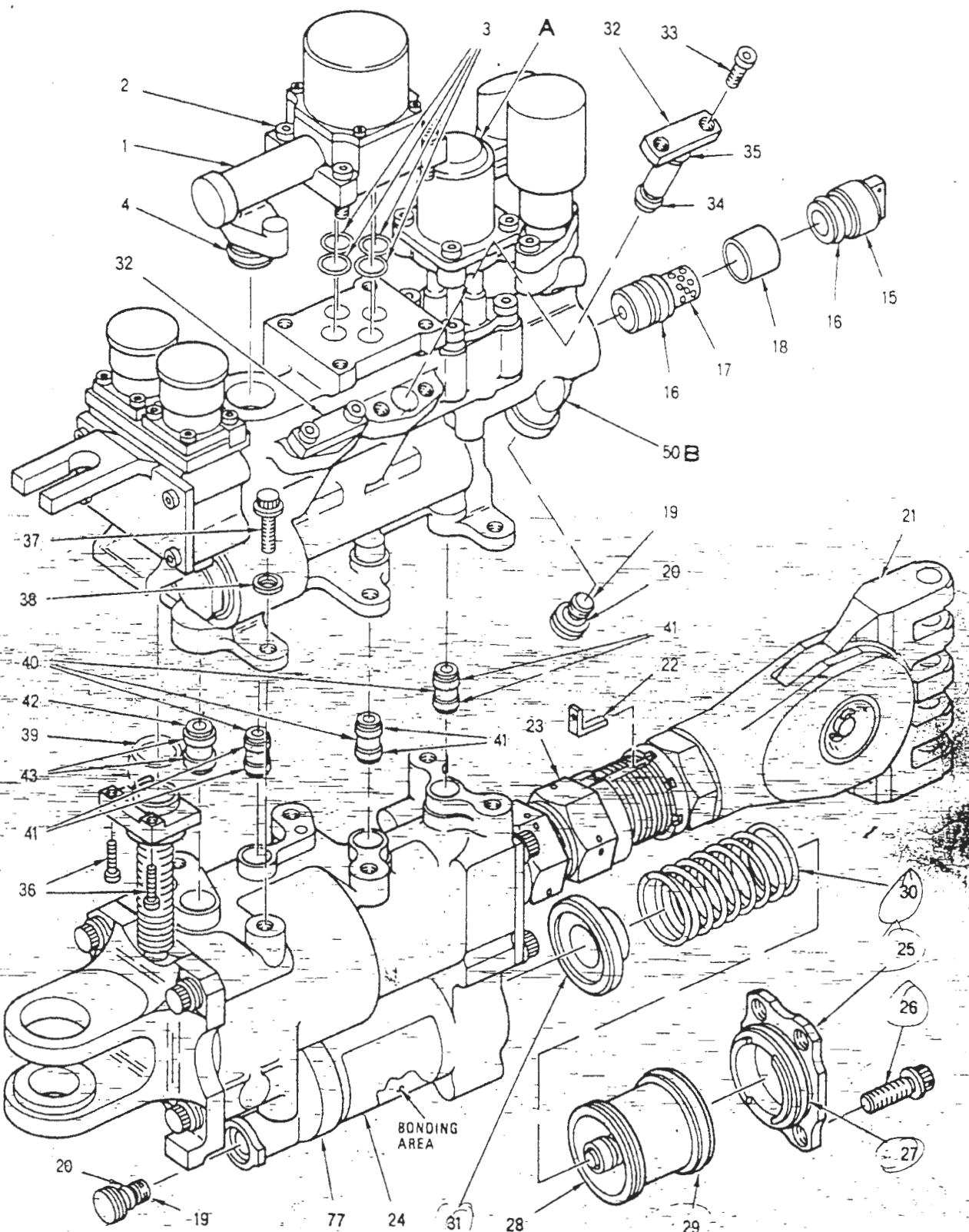
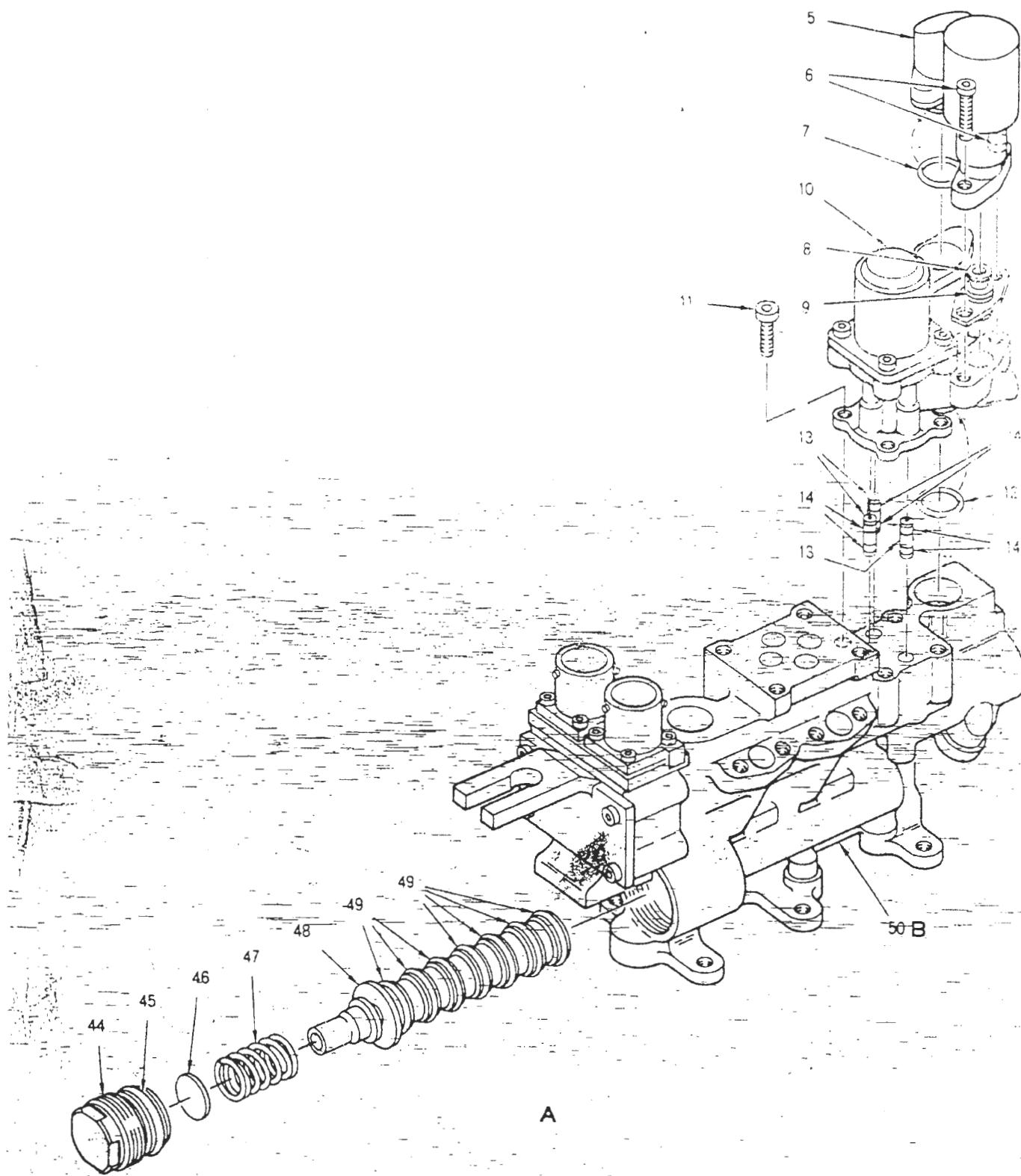


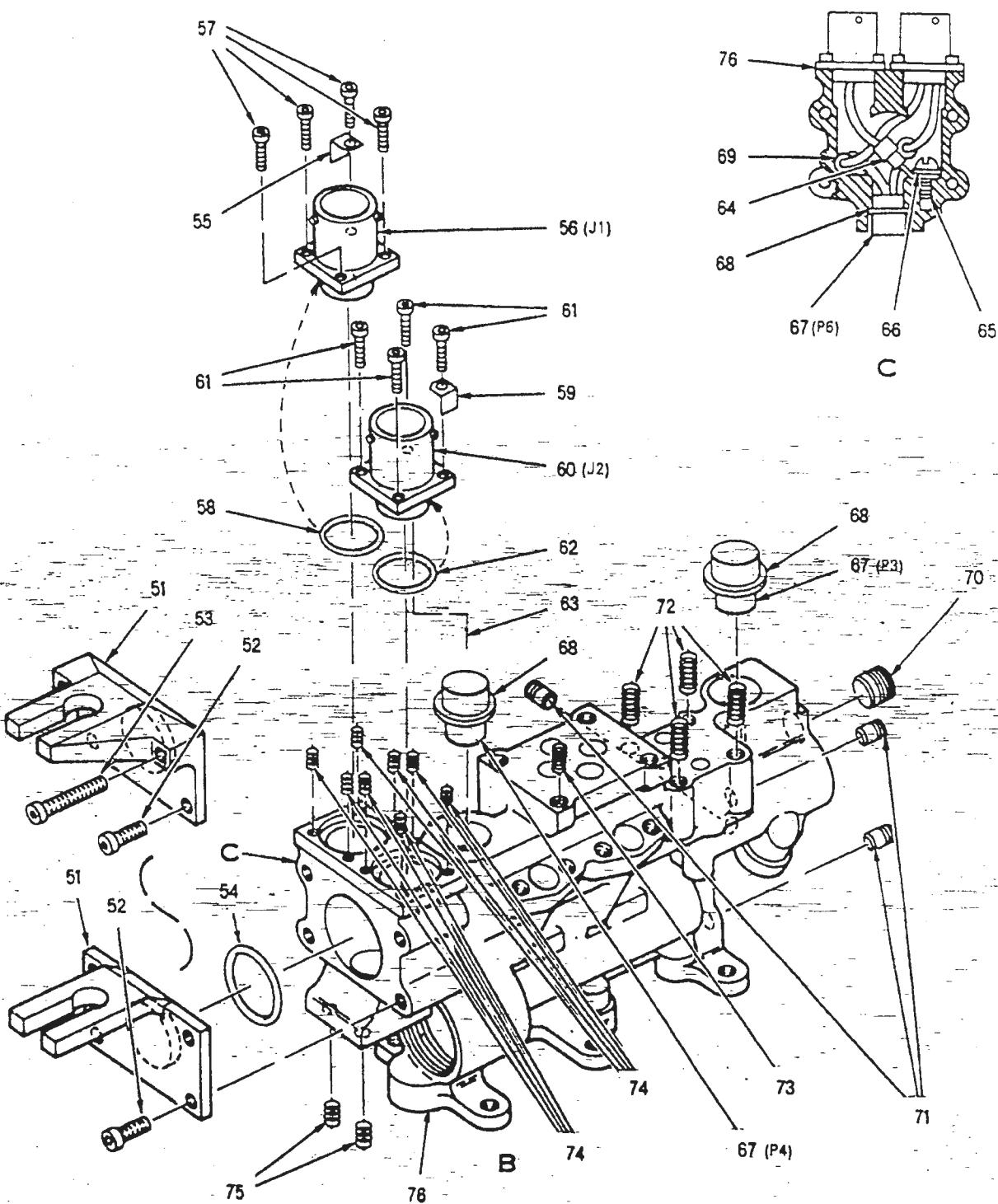
Figure 4. Hydraulic Rudder Servocylinder - 3U3219-2 (Sheet 1 of 6)

VFA-83 CLASS A FM  
ENCLOSURE 21A



412AC-140-09-(8-2)

Figure 4. Hydraulic Rudder Servocylinder (Sheet 2).

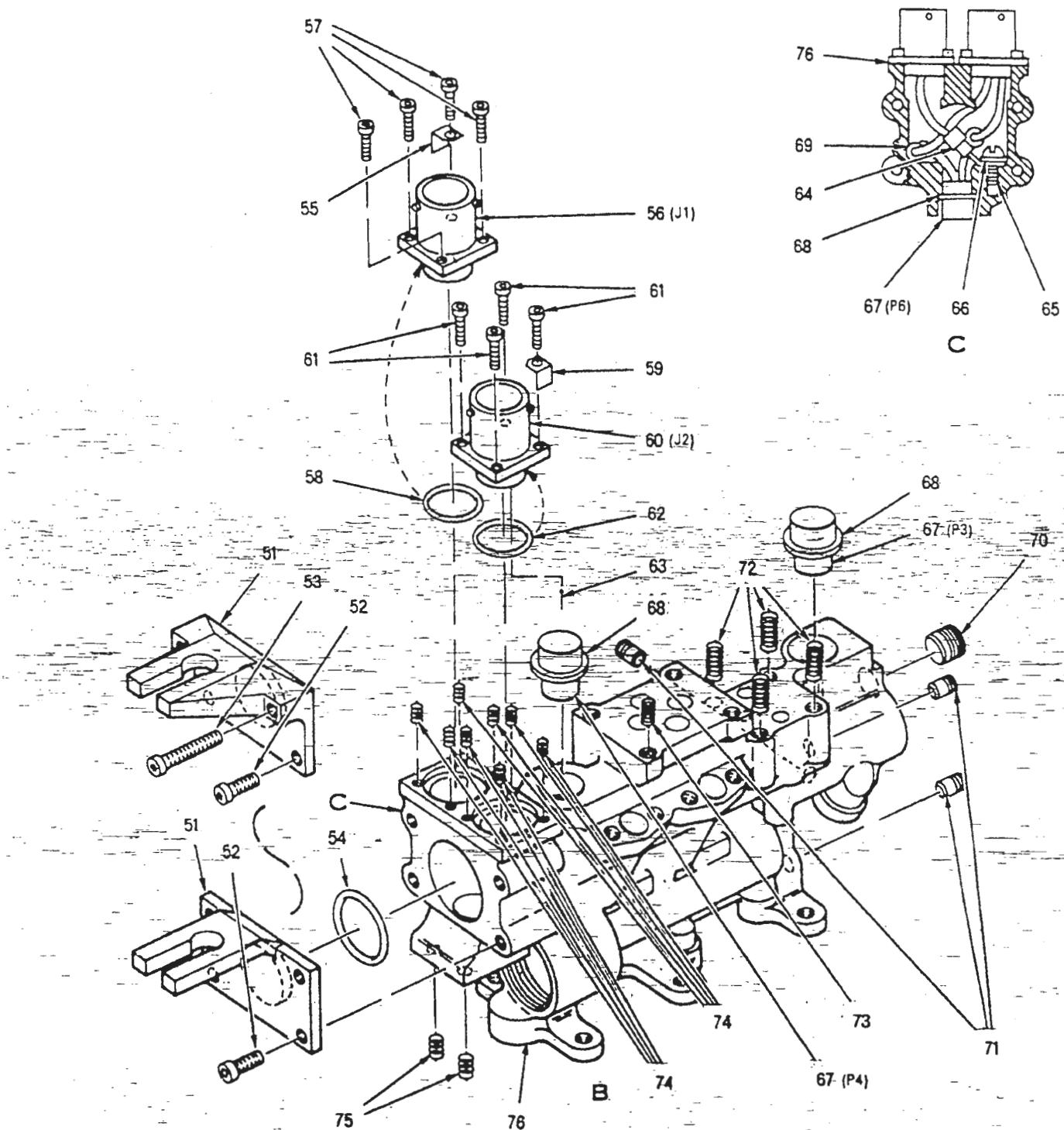


412AC-140-09-(8-3)

Figure 4. Hydraulic Rudder Servocylinder (Sheet 3)

INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USE ON CODE	SM&R CODE
1	3U3219-2 72086	SERVOCYLINDER, HYDRAULIC RUDDER ..... SERVOVALVE, HYDRAULIC /75250/ ..... /HYDRAULIC UNITS INC. SPEC 3219-100/ /BREAKDOWN, WP008 00/	1 1	*	PAOGD PAGDD
	22280680	SERVOVALVE, HYDRAULIC /81873/ ..... /HYDRAULIC UNITS INC. SPEC 3219-100/ /BREAKDOWN, WP009 00/ (ATTACHING PARTS)	1	*	PAGDD
2	NAS1351-3H16P	SCREW ..... -----* -----</td <td>4</td> <td></td> <td>PAGZZ</td>	4		PAGZZ
3	MS28775-012	PACKING .....	4		PAGZZ
4	MS28775-016	PACKING .....	1		PAGZZ
5	1500P62-1	SWITCH, PRESSURE /98087/ ..... /HYDRAULIC UNITS INC. SPEC 3219-119/ (ATTACHING PARTS)	1		PAGZZ
6	NAS1351-3H12P	SCREW .....	2		PAGZZ
7	MS28775-016	-----* -----<br/ PACKING .....	1		PAGZZ
8	3219-042	ORIFICE ASSY, PRESSURE SWITCH .....	1		PAGZZ
9	7011MS160-T	PACKING ASSY /72902/ ..... /MCDONNELL SPEC ST7M254-011-2/	2		PAGZZ
10	3219-061	SOLENOID VALVE /BREAKDOWN, ..... WP010 00/ (ATTACHING PARTS)	1		PAOGD
11	NAS1351-4H10P	SCREW .....	4		PAGZZ
12	MS28775-016	-----* -----<br/ PACKING .....	1		PAGZZ
13	3219-043	QUILL, SOLENOID .....	3		PAGZZ
14	7006MS160-T	PACKING ASSY /72902/ ..... /MCDONNELL SPEC ST7M254-006-27	6		PAGZZ
15	3219-035	PLUG, CHECK VALVE .....	1		PAGZZ
16	7015MS160-T	PACKING ASSY /72902/ ..... /MCDONNELL SPEC ST7M254-015-2/	2		PAGZZ
17	3219-034	VALVE, CHECK .....	1		PAGZZ
18	3219-049	SCREEN, CHECK VALVE .....	1		PAGZZ
19	RF5004-13	ADAPTER /83324/ /MCDONNELL .. SPEC ST7M200T4/	2		PAGZZ
20	MS28775-010	PACKING .....	2		PAGZZ
21	3219-114	HINGE, CLEVIS ASSY .....	1		PBGZZ
22	3219-029	KEY, LOCKING .....	1		PAOZZ
23	3219-022	NUT, ROD .....	1		PAGZZ
24	3219-120	PLATE, IDENTIFICATION .....	1		MDGZZ
25	3219-033	CAP, RESERVOIR .. (ATTACHING PARTS)	1		PAGZZ
26	3219-096	BOLT .....	4		PAGZZ
27	MS28775-127	-----* -----<br/ PACKING .....	1		PAGZZ
28	3219-082	PISTON ASSY, RESERVOIR, ..... REFLENNISHING, DAMPING	1		PAGZZ
29	7220MR160-T	PACKING ASSY /72902/ ..... /MCDONNELL SPEC ST7M254-220-1/	1		PAGZZ
30	3219-031	SPRING, RESERVOIR, ..... REFLENNISHING, DAMPING	1		PAGZZ

Figure 4. Hydraulic Rudder Servocylinder (Sheet 4)



412AC-140-09-(8-3)

Figure 4. Hydraulic Rudder Servocylinder (Sheet 3)

INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USE ON CODE	SM&R CODE
1	3U3219-2 72086	SERVOCYLINDER, HYDRAULIC RUDDER ..... . SERVOVALVE, HYDRAULIC /75250/ ..... /HYDRAULIC UNITS INC. SPEC 3219-100/ /BREAKDOWN, WP008 00/	1	*	PAGGD PAGDD
	22280680	. SERVOVALVE, HYDRAULIC /81873/ ..... /HYDRAULIC UNITS INC. SPEC 3219-100/ /BREAKDOWN, WP009 00/ (ATTACHING PARTS)	1	*	PAGDD
2	NAS1351-3H16P	. SCREW ..... -----*	4		PAGZZ
3	MS28775-012	. PACKING .....	4		PAGZZ
4	MS28775-016	. PACKING .....	1		PAGZZ
5	1500P62-1	. SWITCH, PRESSURE /98087/ ..... /HYDRAULIC UNITS INC. SPEC 3219-119/ (ATTACHING PARTS)	1		PAGZZ
6	NAS1351-3H12P	. SCREW ..... -----*	2		PAGZZ
7	MS28775-016	. PACKING .....	1		PAGZZ
8	3219-042	. ORIFICE ASSY, PRESSURE SWITCH .....	1		PAGZZ
9	7011MS160-T	. PACKING ASSY /72902/ ..... /MCDONNELL SPEC ST7M254-011-2/ SOLENOID VALVE /BREAKDOWN, WP010 00/ (ATTACHING PARTS)	2		PAGZZ
10	3219-061	. SOLENOID VALVE /BREAKDOWN, WP010 00/ (ATTACHING PARTS)	1		PAGDD
11	NAS1351-4H10P	. SCREW .....	4		PAGZZ
12	MS28775-016	. PACKING .....	1		PAGZZ
13	3219-043	. QUILL, SOLENOID .....	3		PAGZZ
14	7006MS160-T	. PACKING ASSY /72902/ ..... /MCDONNELL SPEC ST7M254-006-2/ PLUG, CHECK VALVE .....	6		PAGZZ
15	3219-035	. PLUG, CHECK VALVE .....	1		PAGZZ
16	7015MS160-T	. PACKING ASSY /72902/ ..... /MCDONNELL SPEC ST7M254-015-2/ VALVE, CHECK .....	2		PAGZZ
17	3219-034	. SCREEN, CHECK VALVE .....	1		PAGZZ
18	3219-049	. ADAPTER /83324/ /MCDONNELL SPEC ST7M200T4/	2		PAGZZ
19	RF5004-13	. PACKING .....	2		PAGZZ
20	MS28775-010	. HINGE, CLEVIS ASSY .....	1		PBGZZ
21	3219-114	. KEY, LOCKING .....	1		PAOZZ
22	3219-029	. NUT, ROD .....	1		PAGZZ
23	3219-022	. PLATE, IDENTIFICATION .....	1		MDGZZ
24	3219-120	. CAP, RESERVOIR .....	1		PAGZZ
25	3219-033	(ATTACHING PARTS)			
26	3219-096	. BOLT .....	4		PAGZZ
27	MS28775-127	. PACKING .....	1		PAGZZ
28	3219-082	. PISTON ASSY, RESERVOIR, ..... REPLENISHING, DAMPING	1		PAGZZ
29	7220MR160-T	. PACKING ASSY /72902/ ..... /MCDONNELL SPEC ST7M254-220-1/ SPRING, RESEVOIR, ..... REPLENISHING, DAMPING	1		PAGZZ
30	3219-031				PAGZZ

Figure 4. Hydraulic Rudder Servocylinder (Sheet 4)

INDEX NO.	PART NUMBER	DESCRIPTION	UNITS PER ASSY	USE ON CODE	SM&R CODE
		1 2 3 4 5 6 7			
31	3219-121	. GUIDE, SPRING, RESERVOIR .....	1		PAGZZ
32	3219-044	. RELIEF VALVE ASSY .....	2		PADZZ
33	NAS1351-3H8P	. SCREW .....	2		PADZZ
34	7009MS160-T	. PACKING ASSY /72902/ .....	2		PADZZ
		/MCDONNELL SPEC ST7M254-009-2/			
35	MS28775-011	. PACKING .....	2		PADZZ
36	NAS1352-06H12P	. SCREW .....	2		PAGZZ
37	3219-097	. BOLT .....	6		PAGZZ
38	3219-083	. WASHER, COUNTERSUNK .....	6		PAGZZ
39	MS28775-016	. PACKING .....	1		PAGZZ
40	3219-024	. QUILL .....	3		PAGZZ
41	7011MS160-T	. PACKING ASSY /72902/ .....	6		PAGZZ
		/MCDONNELL SPEC ST7M254-011-2/			
42	3219-025	. RESTRICTOR ASSY .....	1		PAGZZ
43	7012MS160-T	. PACKING ASSY /72902/ .....	2		PAGZZ
		/MCDONNELL SPEC ST7M254-012-2/			
44	3219-036	. PLUG, BYPASS VALVE .....	1		PADZZ
45	MS28775-021	. PACKING .....	1		PADZZ
46	3219-038	. PLATE, BYPASS VALVE .....	1		XBDZZ
47	3219-037	. SPRING, BYPASS VALVE .....	1		PADZZ
48	3219-039	. VALVE ASSY, BYPASS .....	1		PADZZ
49	7114MR160-T	. PACKING ASSY /72902/ .....	7		PADZZ
		/MCDONNELL SPEC ST7M254-114-1f			
50	3219-060	. MANIFOLD ASSY, .....	1		PADD
		SERVOCYLINDER, HYDRAULIC			
		RUDDER /WHEN EXHAUSTED			
		USE 3219-127/			
	3219-127	. MANIFOLD ASSY, .....	1		PADD
		SERVOCYLINDER, HYDRAULIC			
		RUDDER /SUITABLE			
		SUBSTITUTE FOR 3219-060/			
51	3219-058	. LUG, ANTI-ROTATION .....	1	*	PAGZZ
	3219-125	. LUG, ANTI-ROTATION .....	1	*	PAGZZ
52	NAS1351-3H8P	. SCREW .....	4	A	PADZZ
	NAS1351-3H8P	. SCREW .....	2	B	PADZZ
53	NAS1351-3H16P	. SCREW .....	2	B	PAGZZ
		-----*			
54	MS28775-025	. . PACKING .....	1		PAGZZ
55	3219-095-1	. . PLATE, IDENTIFICATION, CHANNEL .....	1		MDDZZ
56	MS27656T13B35PB	. . CONNECTOR, RECEPTACLE .....	1		PAGZZ
		/J1/			
	M39029/58-360	. . CONTACT /USE WITH .....	22		PAGZZ
		INDEX 56/ (ATTLCHNG PARTS FOR INDEX NUMBERS 55 AND 56)			
57	NAS1351-04H6P	. SCREW .....	4		PAGZZ
		-----*			
58	MS28775-018	. . PACKING .....	1		PAGZZ
59	3219-095-2	. . PLATE, IDENTIFICATION, CHANNEL .....	1		MDDZZ
60	MS27656T13B35P	. . CONNECTOR, RECEPTACLE .....	1		PAGZZ
		/J2/			
	M39029/58-360	. . CONTACT /USE WITH .....	22		PAGZZ
		INDEX 60/			

Figure 4. Hydraulic Rudder Servocylinder (Sheet 5)

INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USE ON CODE	SM&R CODE
(ATTACHING PARTS FOR INDEX NUMBERS 59 AND 60)					
61	NAS1351-04H6P	SCREW .....	4	PAGZZ	
62	MS28775-018	PACKING .....	1	PAGZZ	
63	MS27488-22	SEALING PLUG .....	12	PADZZ	
64	MS25036-108	TERMINAL, LUG .....	1	PADZZ	
(ATTACHING PARTS)					
65	MS35276-261	SCREW .....	1	PADZZ	
66	MS35338-43	LOCKWASHER .....	1	PADZZ	
67	3219-103 M39029/63-368	CONNECTOR, PLUG /P3, P4, P6/ .....	3	PADZZ	
		CONTACT /USE WITH INDEX 67/ .....	12	PADZZ	
(ATTACHING PARTS)					
68	3219-051	RETAINER .....	1	PADZZ	
69	NAS1745-2	SPLICE, CONDUCTOR /REPLACED BY M83519/1-2/	4	PADZZ	
	M83519/1-2	SPLICE, CONDUCTOR .....	4	PADZZ	
70	PLGA4060010	PLUG ASSY /92555/ /MCDONNELL SPEC ST7M141D13SX/ /0.010 INCH OVERSIZE/	1	PADZZ	
71	PLGA2181010	PLUG ASSY /92555/ /MCDONNELL SPEC ST7M141D7LX/ /0.010 INCH OVERSIZE/	3	PADZZ	
72	MS21209F4-15	INSERT .....	4	PADZZ	
73	MS21209F1-20	INSERT .....	14	PADZZ	
74	MS21209F0420--	INSERT .....	8	PADZZ	
75	MS21209E0620	INSERT .....	2	PADZZ	
76	3219-060-1	MANIFOLD .....	1	XADZZ	
77	3219-111	CYLINDER ASSY /BREAKDOWN, WR011-60/	1	PAGGD	

\* ALTERNATE OR EQUIVALENT PARTS.

CODE	USABLE ON
A	3219-053
B	3219-125

Figure 4. Hydraulic Rudder Servocylinder (Sheet 6)